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FACT SHEET



UNITED STATES
DEPARTMENT
OF AGRICULTURE



ENERGY CONSERVATION IN THE RURAL HOME

Weatherize Your Mobile Home To Keep Costs Down, Comfort Up

The cost of operating your mobile home affects your budget. The comfort level affects your health. These are major considerations as you look for ways to save energy in heating and cooling it.

Heat is lost from your mobile home through ceilings, floors, windows, and walls. More than half of this loss is through ceilings and roofs. Ten to 20 percent is through floors. Windows and doors lose heat through conduction. Infiltration of air through cracks and holes robs you of still more heat. In the summer you lose air conditioning comfort in the same ways as heat is lost in the winter.

Look For The Label

If your home was manufactured before mid-1976, check the main places where heat is lost. If the manufacturing date is later, look for an indication (a label permanently attached on an interior wall) that it was built according to *Mobile Home Construction and Safety Standards issued by the U.S. Department of Housing and Urban Development (HUD), effective June 15, 1976*. A mobile home built according to the HUD standards meets basic requirements for condensation control, air infiltration, and thermal insulation (in the ceiling, walls and floors). Some homes exceed minimum HUD performance standards for thermal protection and are labeled as "Energy Conserving Homes." They receive a HUD heating and cooling certificate. If you find nothing to indicate thermal protection, then retrofit (winterize) the mobile home yourself.

Locate For Safety and Warmth Or Shade

How your home is placed (oriented) on its site will determine its comfort and safety. First, locate your home

to protect it from strong wind. Second, take advantage of the sun's warmth in cold climates or of shade in hot zones. Come as close as you can to these suggested ideals:

1. If wind safety permits, locate the long sides of the home to face north and south. Otherwise, the home will be warmed unevenly, and light coming through west windows will be a problem.
2. Face kitchens east, or at least not west.
3. Windbreaks are needed most along north and west sides. Use something like:
 - a semi-enclosed carport
 - large evergreen shrubs
 - evergreen trees that hold their lower limbs
 - a tall fence
4. Shade the south side in summer by using:
 - awnings
 - porches
5. Plant deciduous trees on the east, west, and south sides of the home.

With the home properly sited and placed on a firm foundation, tie it down carefully. Use the straps the manufacturer supplies, or secure the home with the correct number of over-the-top straps. Anchoring specifications are readily available from dealers, installers, or the Cooperative Extension Service in your county. Shortcutting this step endangers the lives of family members and leaves the home vulnerable to being wrecked by windstorms.

Insulation

First, insulate overhead, where the greatest heat loss occurs. A urethane foam material 3 or more inches in thickness may be sprayed (on the roof only) and then topcoated with a protective liquid glass sealer to prevent discoloration and deterioration.

Cooling comfort can be increased through the use of cool seal reflective roof coating. This thick fibrous substance contains aluminum particles that migrate to the surface as the coating dries. A good thick coating is needed.

A note of caution; check the original coating material on your roof. Foam insulation will not stick to some coatings and an insulated false roof will have to be constructed in those instances.

Second, install fiberglass batts beneath the floor. Buy batts with a vapor barrier and place the vapor barrier toward the inside of the home. Keep the batts in place by

attaching chicken wire to the joists. Use the R-values of insulation recommended by your power company or the Cooperative Extension Service in your county.

Weatherstripping and Caulking

Weatherstripping and caulking are next.

Put weatherstripping around all windows and outside doors, filling in cracks. Double check the threshold portion of outside doors. Don't leave a crack between the bottom of the door and the threshold. Wear sometimes causes a crack to develop.

Caulking requires detective work. Air leaks and cracks not only increase the cost of heating and cooling, they let in damaging moisture. Check carefully around moldings, joints, nails, screws (especially in the siding panels), splash panels, windows, top seams, doors, roof vents and wheel housing. Seal all openings each year with a quality caulking compound. You can buy caulking in a variety of colors to match exterior colors. Use roofing cement on roof seams and around roof vent stacks.

Storm Windows

You can add an extra layer of protection to windows simply by taping a layer of 4 to 6 mil polyethylene over them. This is transparent "builders plastic." Use pressure sensitive masking or duct tape and place it along the entire clean edge on all four sides. This extra layer is useful even with storm windows; it adds the effect of triple glazing.

Skirting

If you have never gotten around to skirting or underpinning your home, do that, too. Skirting cuts drafts, aids insulation, and keeps high winds from producing an uplift effect on the home that can be damaging and dangerous. You can use corrugated metal or plastic as well as concrete blocks or brick.

Temporary skirting with hay bales or bagged leaves causes problems, for they may shift accidentally and close up necessary vent spaces. They are also a fire hazard since they ignite easily. It is better to use a more permanent noncombustible material. If the home has an underfloor burner for heating air or water, be sure that adequate openings are left in the skirting to supply fresh air for combustion.

About six 8- by 16-inch vents should be placed in the skirting to allow ventilation. One on each end, two along the front, and two along the back sides will probably do an adequate job. A panel should be built to maintain equipment underneath the mobile home. Vents should be placed no closer than 4 or 5 feet to a water line, but one vent should be placed as near as possible to the air intake of the furnace. Exposed water pipes—especially

hot water pipes—should be wrapped with pipe insulation that is fitted and taped carefully over the full length of the exposed area. If heating ducts beneath the floor are not insulated, they should be. Use a minimum R-4 special duct insulating blanket and tape it in place.

The Thermostat

Reducing thermostat settings can save as much as 3 percent of fuel costs per degree Fahrenheit. Try these:

Heating Season

65° - 68° F

Adjust downward 5° - 10° at night

Cooling Season

10° F below outside temperature but no lower than 78° F.

If winter humidity can be controlled—try for a 50 percent humidity level. Keep it low enough to avoid window condensation problems. A little moisture can be added in the winter by carefully placing pans of water throughout the house for evaporation, but a furnace humidifier gives the most satisfactory results.

Maintenance

Take all the measures we have just discussed. Then carefully and systematically check item at least once a year.

Prepared by

Barbara J. Griffin,
Assistant Professor,
Agricultural Engineering Department,
Clemson University, South Carolina

Fact Sheets In The Home Weatherization Sheets

1. Why Weatherize Your Home?
2. How To Determine Your Insulation Needs
3. Save Heating And Cooling Dollars With Weatherstripping And Caulking
4. How To Save Money With Storm Doors And Windows
5. What To Look For In Selecting Insulation
6. How To Install Insulation For Ceilings
7. How To Install Insulation For Walls
8. How To Install Insulation For The Floor And Basement
9. Solving Moisture Problems With Vapor Barriers And Ventilation
10. Weatherize Your Mobile Home To Keep Costs Down, Comfort Up
11. Tips On Financing Home Weatherization
12. Keeping Home Heating And Cooling Equipment In Top Shape
13. Landscaping To Cut Fuel Costs
14. Home Management Tips To Cut Heating Costs
15. Locating New Home Sites To Save Fuel

Single copies are available upon request to Special Reports Division, Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250.

This series of fact sheets was assembled from research, Extension and other sources by the USDA Task Force on Weatherization.